

## 5. Summary

### Diseases, reproduction and immobilization of orang-utans (*Pongo pygmaeus*) in zoological gardens

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August 2002

95 pages, 4 figures, 21 tables, 494 references, appendix with 1 figure and 22 tables

From 10 German zoological gardens data about diseases, reproduction, and immobilisation were captured covering 123 years of keeping orang-utans. Medical files records of anesthesia, pathological examination reports, results of further-reaching examinations, and additional interviews with zoo veterinarians in attendance served as a basis. For the examination report the medical data of 239 orang-utans were processed and analyzed. Altogether 2346 case reports were evaluated and the results were compared with the international specialist literature.

As the report reveals the keeping of orang-utans has improved in the course of years and the state of health of the examined population can by now be considered as very good.

The immobilizations of the orang-utans were effected in 65% of the cases by neuroleptanalgesis using a mixture of Xylazin and Ketamin in one syringe for a single intramuscular injection.

Among the most common diseases were uncomplicated infections of the gastro-intestinal and respiratory tracts. More seldom were diseases of the mobility and reproductive system. The highest losses of animals were due to diseases of the reproductional organs, the gastro-intestinal tract, and the respiratory organs. One of the not so frequent diseases of the orang-utans was the air-sacculitis which is difficult to treat, chronic, recurrent, and requiring invasive methods of therapy. An especially difficult problem within enclosed populations were *klebsiella*-infections of the respiratory tract which turned out to be resistant to therapy. Infestations by *strongyloides* which can take a severe course especially with young animals are easy to control since the introduction of anthelminthika of the Avermectin-group. The high rate of casualties caused by diseases of the reproductional organs could be put down to high death rate of 29% of the young animals during the last two decades which requires further etiologic and pathogenetic clarification.

Diseases of the orang-utan (e.g. vaginal prolapse, spasmophilie), infections (e.g. by *coxiella* sp.), and infestations (e.g. by *gastrodiscus* sp.) which are not yet described in the international literature are elucidated separately in the respective chapters.

Based on the submitted results recommendations for improvements in the medical treatment were elaborated and suggestions for future research assignments are made.

This study represents the first survey of the medical status of a European orang-utan population. For the practising zoo veterinarian the results offer basic data which he can compare to the data of orang-utan population he is in charge of, and which he can use as a check for his own medical management.